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MEMORANDUM

To: Members of the Independent Laboratory Advisory Committee (ILAC)

From: Medical Marijuana Program Staff, DPBH

Date: July 30, 2015

Re: Staff Report: Review of Nevada law/regulation regarding testing process for edibles and infused products. ILAC agenda item 8.

Numerous topics were discussed at the July 1, 2015 ILAC meeting. Division of Public and Behavioral Health (Division) staff were asked to provide insight on edibles and infused product laboratory testing issues. The following research results were gathered from a variety of internet sources. Some of these were official government sites, others were unofficial sources. The Division is therefore not able to confirm the currency or accuracy of all the information that appears in this report.

Are edibles subject to the same testing process as flower?

No. Edibles must undergo a different testing process.

What does the law say about that?

First, it is important to recall the different definition for “usable marijuana” as opposed to “edible marijuana products” and “marijuana-infused products.” The statutory definitions are shown below.

NRS 453A.160 “Usable marijuana” defined.

1. “Usable marijuana” means:
 - (a) The dried leaves and flowers of a plant of the genus *Cannabis*, and any mixture or preparation thereof, that are appropriate for the medical use of marijuana; and
 - (b) The seeds of a plant of the genus *Cannabis*.
2. The term does not include the stalks and roots of the plant.

NRS 453A.101 “Edible marijuana products” defined. “Edible marijuana products” means products that:

1. Contain marijuana or an extract thereof;
2. Are intended for human consumption by oral ingestion; and
3. Are presented in the form of foodstuffs, extracts, oils, tinctures and other similar products.

NRS 453A.112 “Marijuana-infused products” defined.

1. “Marijuana-infused products” means products that:
 - (a) Are infused with marijuana or an extract thereof; and
 - (b) Are intended for use or consumption by humans through means other than inhalation or oral ingestion.
2. The term includes, without limitation, topical products, ointments, oils and tinctures.

Informally, we may consider “usable marijuana” as flower and leaves which may be used or consumed via inhalation; edible products as those which are consumed via oral ingestion, and infused products as those which are used or consumed via topical application. Usable marijuana is the source of edible marijuana products and marijuana-infused products.

Pursuant to regulation, usable marijuana requires 8 different tests. Those tests are:

1. Moisture content
2. Potency analysis (i.e., cannabinoids)
3. Terpene analysis
4. Foreign matter inspection
5. Microbial screening
6. Mycotoxin screening
7. Heavy metal screening
8. Pesticide residue analysis

All other forms of marijuana require one to four tests. These include, but are not limited to:

- Potency analysis (common across all edible/infused products)
- Terpene analysis (extracts and infused products)
- Microbial screening

Potency analysis testing is required for all forms of marijuana. *It is important to note that pesticide residue analysis is not a secondary test for edible and infused products, pursuant to regulation.* Below, the Division has reproduced the chart that can be found in the Nevada Administrative Code.

NAC 453A.404 Quality assurance testing required before sale of usable marijuana and related products. ([NRS 453A.370](#)) A medical marijuana establishment shall not sell a lot of usable marijuana, edible marijuana products or marijuana-infused products until all required quality assurance testing has been completed.

(Added to NAC by Div. of Pub. & Behavioral Health by R004-14, 3-28-2014, eff. 4-1-2014)

NAC 453A.654 Required quality assurance tests. ([NRS 453A.370](#))

1. Each independent testing laboratory must use the general body of required quality assurance tests for usable marijuana, marijuana-infused products, extracts of marijuana and edible marijuana products set forth in this section. Such tests may include moisture content, potency analysis, foreign matter inspection, microbial screening, pesticide and other chemical residue and metals screening and residual solvents levels. An independent testing laboratory may request additional sample material in excess of the amounts listed in the table set forth in this section for the purposes of completing required quality assurance tests. An independent testing laboratory may retrieve samples from the premises of another medical marijuana establishment and transport the samples directly to the laboratory.

2. The tests required pursuant to subsection 1 and the sample size of products required for the required testing of each type of marijuana or marijuana product by an independent testing laboratory are as follows:

| Product | Tests Required | Sample Size Needed to Complete all Tests |
|--|--|--|
| Usable marijuana | <ol style="list-style-type: none"> 1. Moisture content 2. Potency analysis 3. Terpene analysis 4. Foreign matter inspection 5. Microbial screening 6. Mycotoxin screening 7. Heavy metal screening 8. Pesticide residue analysis | 12 grams or less |
| Extract of marijuana (nonsolvent) like kief, hashish, bubble hash, infused dairy butter, or oils or fats derived from natural sources | <ol style="list-style-type: none"> 1. Potency analysis 2. Foreign matter inspection 3. Microbial screening 4. Terpene analysis | 7 grams or less |
| Extract of marijuana (solvent-based) made with a CO ₂ extractor | <ol style="list-style-type: none"> 1. Potency analysis 2. Terpene analysis 3. Microbial screening | 2 grams or less |
| Extract of marijuana (solvent-based) made using n-butane, isobutane, propane, heptane, or other solvents or gases approved by the Division of at least 99 percent purity | <ol style="list-style-type: none"> 1. Potency analysis 2. Terpene analysis 3. Residual solvent test 4. Microbial screening (only if using marijuana that failed the initial test) | 2 grams or less |
| Extract of marijuana made with food grade ethanol | <ol style="list-style-type: none"> 1. Potency analysis 2. Terpene analysis 3. Microbial screening (only if using marijuana that failed the initial test) | 2 grams or less |
| Extract of marijuana made with food grade glycerin or propylene glycol | <ol style="list-style-type: none"> 1. Potency analysis 2. Terpene analysis 3. Microbial screening (only if using marijuana that failed the initial test) | 20 grams or less |
| Edible marijuana-infused product | <ol style="list-style-type: none"> 1. Potency analysis 2. Terpene analysis 3. Microbial screening | 1 unit |
| Liquid marijuana-infused product, including, without limitation, soda or tonic | <ol style="list-style-type: none"> 1. Potency analysis 2. Terpene analysis 3. Microbial screening | 1 unit |
| Topical marijuana-infused product | Potency analysis | 1 unit |

How does the testing process differ for edible and infused products?

The testing process for a lot of marijuana would proceed as follows: First, after a lot of usable marijuana is ready to be tested, the cultivator will isolate the lot and the independent laboratory personnel will select the sample to be tested. After the eight required tests at the laboratory are performed, if the lot passes, the cultivator may provide the lot to a production facility for further processing.

If, for example, the usable marijuana is processed into an extract via carbon dioxide, the laboratory will take a sample of the extract from the lot and test for cannabinoids, terpenoids, and microbes.

As part of the normal report of the laboratory results, the laboratory will notify the production facility of the cannabinoid and terpenoid concentration for the purposes of labeling the product and determining the serving size in a given package. The standard for passing a microbial test is detailed in NAC 453A.658(6).